

# PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No.: PAPIERNIK-2

|                                       |   |                          |
|---------------------------------------|---|--------------------------|
| In re Application of:                 | ) |                          |
|                                       | ) |                          |
| WOLFGANG PAPIERNIK & GUIDO STÖPPLER   | ) | Examiner: Pham, Thomas K |
|                                       | ) |                          |
| Serial No.: 10/753,968                | ) | Group Art Unit: 2121     |
|                                       | ) |                          |
| Filed: January 8, 2004                | ) | Confirmation No.: 5670   |
|                                       | ) |                          |
| For: METHOD FOR IDENTIFYING A CONTROL | ) |                          |
| PATH OF A CONTROLLED SYSTEM           | ) |                          |

### RESPONSE TO OFFICIAL ACTION dated January 30, 2006

MAIL STOP AMENDMENT  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

S I R:

This communication is in response to the Official Action of January 30, 2006, having a shortened period for response terminating May 1, 2006.

The Commissioner is hereby also authorized to charge any fees which may be required during the pendency of this application, including any patent application processing fees under 37 C.F.R. 1.17, and any filing fees under 37 C.F.R. 1.16, including presentation of extra claims, or credit any overpayment to Deposit Account No: 06-0502.

Please amend the above-entitled application as follows:

**AMENDMENTS TO THE CLAIMS WITH MARKINGS TO SHOW CHANGES  
MADE, AND LISTING OF ALL CLAIMS WITH PROPER IDENTIFIERS**

1. (Canceled)
2. (Currently amended) The method of claim ~~[[1]]~~ 7, wherein the function is stored in the form of a table and/or in the form of splines.
3. (Original) The method of claim 2, wherein the at least one deterministic perturbation correcting signal is determined from an output signal obtained from at least one controller of a closed control loop of the controlled system.
4. (Original) The method of claim 3, and further comprising the step of setting an amplification factor of the controller to a high value for determining the deterministic perturbation correcting signal in the first identification process.
5. (Original) The method of claim 3, and further comprising the step of setting an amplification factor of the controller to a low value for identifying a control path of the controlled system in the second identification process.
6. (Canceled)
7. (Currently amended) A [The] method of claim 6 for identifying a control path of a controlled system, comprising the steps of:  
determining at least one deterministic perturbation correcting signal in a first identification process;  
storing the perturbation correcting signal in the form of a function;  
and  
identifying a control path of the controlled system in a second identification process by adding to the controlled system the at least one stored deterministic perturbation correcting signal with a negative feedback,  
wherein the stimulus signal has a broad-band frequency spectrum.

8. (Currently amended) The method of claim ~~[[1]]~~ 7, wherein the perturbation correcting signal is added at the same location where a deterministic perturbation is applied in the controlled system.
9. (Currently amended) A ~~[[The]]~~ method for identifying a control path of a controlled system, comprising the steps of:
  - determining at least one deterministic perturbation correcting signal in a first identification process;
  - storing the perturbation correcting signal in the form of a function;
  - and
  - identifying a control path of the controlled system in a second identification process by adding to the controlled system the at least one stored deterministic perturbation correcting signal with a negative feedback  
of claim 4,wherein identifying the control path of the controlled system in the second identification process includes the steps of Fourier-transforming an input signal and an output signal of the controlled system into the frequency domain, dividing the Fourier-transformed output signal by the Fourier-transformed input signal, and computing a complex transmission function of the controlled system to identify the control path.
10. (Original) The method of claim 9, wherein computing the complex transmission function includes computing a frequency response of a magnitude and of a phase of the controlled system.
11. (Currently amended) Use of the method of claim ~~[[1]]~~ 7 for identifying a control path of a controlled system employed in a machine tool, a production machine or a robot.

12. (Original) Use of the method according to claim 11 for identifying the control path of a controlled system experiencing perturbation effects from slot latching of a drive motor driving a machine tool, a production machine or a robot.
13. (New) The method of claim 9, wherein the function is stored in the form of a table and/or in the form of splines.
14. (New) The method of claim 13, wherein the at least one deterministic perturbation correcting signal is determined from an output signal obtained from at least one controller of a closed control loop of the controlled system.
15. (New) The method of claim 14, and further comprising the step of setting an amplification factor of the controller to a high value for determining the deterministic perturbation correcting signal in the first identification process.
16. (New) The method of claim 14, and further comprising the step of setting an amplification factor of the controller to a low value for identifying a control path of the controlled system in the second identification process.
17. (New) Use of the method of claim 9 for identifying a control path of a controlled system employed in a machine tool, a production machine or a robot.
18. (New) Use of the method according to claim 17 for identifying the control path of a controlled system experiencing perturbation effects from slot latching of a drive motor driving a machine tool, a production machine or a robot.

## REMARKS

The last Office Action of January 30, 2006 has been carefully considered. Reconsideration of the instant application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1-12 are pending in the application. Claims 1 and 6 have been canceled. Claims 2, 7, 8, 9, and 11 have been amended. New claims 13-18 have been added. No amendment to the specification has been made. No fee is due.

Claims 1-6 and 8 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. 5,036,265 to Weihrich.

Claims 11-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Weihrich.

It is noted with appreciation that claims 7, 9 and 10 are indicated allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims.

For the purpose of expediting the patent application process in a manner consistent with the PRO's Patent Business Goals (PBG), 65 Fed. Reg. 54603 (September 8, 2000), applicant has rewritten original claims 7 and 9 in independent form, as suggested by the Examiner, who indicated that originally filed claims 7 and 9 would be allowable if rewritten in independent form. Accordingly, applicant asserts that claims 7 and 9 have not been narrowed to trigger prosecution history estoppel. *See Salazar v. Procter & Gamble Co.*, 75 USPQ2d, 1369 (stating that introducing claim 7 based on the allowable subject matter of dependent claim 3 of the "149 application was not a narrowing amendment for purposes of patentability and, therefore, does not by itself give rise to prosecution history estoppel).

Claims 2 and 11 have been amended to change their dependency. Claims 13-18 have been added and made dependant from claim 9 to set forth the subject matter of original claims 2-5, 11, and 12.

In view of the above presented remarks and amendments, it is respectfully submitted that all claims on file should be considered patentably differentiated over the art and should be allowed.

Reconsideration and allowance of the present application are respectfully requested.

Should the Examiner consider necessary or desirable any formal changes anywhere in the specification, claims and/or drawing, then it is respectfully requested that such changes be made by Examiner's Amendment, if the Examiner feels this would facilitate passage of the case to issuance. If the Examiner feels that it might be helpful in advancing this case by calling the undersigned, applicant would greatly appreciate such a telephone interview.

Respectfully submitted,

By: 

Henry M. Feiereisen  
Agent For Applicant  
Reg. No: 31,084

Date: April 4, 2006  
350 Fifth Avenue  
Suite 4714  
New York, N.Y. 10118  
(212)244-5500  
HMF/WS:af